

is a picture of a type existing in Lamarck's own herbarium. Those who have access to that portrait will observe how closely it corresponds with the portrait here given.

Lastly as a contribution to the better understanding of the two species a third plate is added here showing the distinctive pose of their leaves.

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HIBISCUS SABDARIFFA, VAR., ALTISSIMA.

In the Gardens' Bulletin opposite p. 244 of part 7 of this volume *Hibiscus Sabdariffa*, var., *altissima* was illustrated: and the remark was made on p. 243 that the fruits are too small and on account of their hairs little suited for making jams and jellies.

The variety is indeed a fibre plant and not a food plant, and as such should be experimented with in this country. At a recent date its fibre offered on the London market as Bimlipatam jute was worth £45 per ton.

Bimlipatam is a small port in the Madras presidency just south of the great Bengal jute area, where *Hibiscus cannabinus* is the local fibre plant and is grown plentifully in lines among other crops, retted and the fibre marketed. The fibre is slightly stronger than jute, but because the supply is used up along with jute gets the same price as the first marks of jute.

Hibiscus Sabdariffa being a species closely allied to *H. cannabinus*, it is not surprising to find in its tall variety *altissima* characters as to fibre which are common to both: and excellent fibre has been prepared in the Economic Garden, Singapore, by Mr. Mathieu, and valued in London, by the kindness of Professor W. R. Dunstan, at the figure above. The process used was retting.

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ORCHID NOTES.

BULBOPHYLLUM LIMBATUM, Lindl.

In 1840 Lindley described as *Bulbophyllum limbatum* a small orchid which had been grown in Messrs. Loddiges' horticultural establishment at Hackney, near London. He recorded its origin as Singapore: and at the same place (*Botanical Register*, XXVI. 1840, Misc. p. 74) he described several other orchids from Singapore to which the further record is added that they were "received from Mr. Cuming." These others are all well-known to grow wild in Singapore: but *B. limbatum* had not been seen again until last year.

Hugh Cuming was a great collector, who visited our coasts upon his way to and from the Philippine islands in 1835 and 1839. Although it is not expressly stated in the *Botanical Register*, it is

almost certain that it was he who took the *Bulbophyllum* to Britain; and as the other orchids are all species found locally in Singapore, the probability is that the Singapore forests and not the Singapore port, furnished it. The new locality at which it has been obtained is Kotah Tinggi in Johore, and the finder Mr. H. Leu Jeppesen, of the Mount Austin Estate.

Lindley's description, slightly modified, appears in Sir Joseph Hooker's *Flora of British India*, V. 1890, p. 763. and in Mr. H. N. Ridley's *Materials for a Flora of the Malay Peninsula, Monocotyledons*, I. 1908, p. 69. It is now possible to add to it.

The pseudobulbs were described from dried material by Sir Joseph Hooker as depressed subglobose: they are when fresh obturbinate. The leaf which has not been described is almost narrowly elliptic, being by but a little more rapidly narrowed below than above; it is 9 cm. long by 2 cm. wide, solitary, on a petiole 1 cm. long. The inflorescence may exceed the four inches of Lindley's description, and be 15 cm. long: upon it Mr. Jeppesen has seen as many as 12 flowers. The flowers give the impression of being of a dark claret colour: in detail they are thus. The centre within about the base of the column and of the petals is chrome yellow; this becomes paler outwards and tinged with lake on the sepals and petals under their purplish-chocolate margin. The dorsal sepal has three relatively wide purplish chocolate bands down it, which become somewhat interrupted towards its base; and the lateral sepals have five. Their margins are finely pubescent. The petals have one band running into the margin: they are half as long as the sepals. The lip is liver-coloured, paler below upon a triangular margined area with its base the hinge: this area has microscopic purple spots: there is a margined narrow groove on the upper surface extending nearly to the tip, with a chocolate border at the base. Seen from below the lip is elliptic-ovate; from the side it looks exactly like an ox-tongue in the same position: from above the groove makes it subcordate: it all but equals the sepals, and is distinctly mobile. The horns of the column project upon either side of the anther in the same plane as the column.

EULOPHIA MACROSTACHYA. Lindl.

Eulophia macrostachya, Lindl., is an addition to the Flora of the Malay Peninsula. Though an orchid of unusually wide distribution, it had remained unknown as occurring in the Peninsula until last year. It was found on a limestone hill near Sungei Siput, in Perak, and was brought into the Botanic Gardens in Singapore where it flowered in October.

In 1919 it was received in the Gardens from the Tambilan islands which are between Singapore and Borneo: and it is known to occur in Ceylon, up to 4,000 feet, in Travancore and in the Nilgiri hills, in Sumatra, Java, Ternate, Mindanao and Leyte. In 1889 a plant of it of unknown origin flowered in the Singapore Gardens.

SPATHOGLOTTIS AFFINIS, de Vriese.

Spathoglottis affinis, de Vr., is a second addition to the Flora of the Peninsula. This beautiful little terrestrial orchid, hitherto known only from the mountains of Salak and Tegal in Java, was found in 1919 by Mr. Mohamed Haniff on Kedah Peak, and has since flowered freely in the Waterfall Gardens, Penang.

The specimens were referred to Dr. J. J. Smith of Buitenzorg for confirmation of the name, and he writes that he regards it as correctly named *S. affinis*, but that the side lobes and the claw of the midlobe are much narrower than in the Javanese plant, and that the callus too is thinner.

ACANTHEPHIPIUM SYLHETENSE, Lindl.

In the Gardens' Bulletin II, No. 2, 1918, p. 44, the genus *Acanthephippium* was added to the flora of the Malay Peninsula; since when a second species has been found south of the isthmus of Kra.—this one in the Siamese Malay States. The second species is *A. sylhetense*, Lindl., which was brought alive into the Waterfall Gardens, Penang, by Mr. Mahomed Haniff from Bukit Khaw Poh near Kasum.

The flowers of the plant from Siam are few, and just before opening they are $1\frac{1}{2}$ inches long from the tip to the base of the bucket, with a maximum width of $\frac{5}{8}$ of an inch. They are creamy white with yellowish lines where the sepals meet. They commence their opening, by splitting between the lateral sepals, and then give off a faint pleasant scent. The tip of the labellum can be seen in the opening. With further expansion the lateral sepals become obliquely revolute making with each other a wide V. The petals outgrow the dorsal sepal and stand forward beyond it slightly. The free parts of the sepals and petals are minutely dotted with a pink, which on the inside of the lateral sepals is somewhat collected into five bands, the lowest (nearest to the line of contact between the two sepals and so under the labellum) being very faint. The labellum has the inverted saddle shape so characteristic of the genus; the side lobes which make the side flaps being of a flattened axe-shape, the midlobe is tongue-shaped and curves downwards. It is of a clear buttercup yellow, and so is the part of the limb behind it, where are three crests, the lateral double toothed at the back. The rest of the inside of the flower is creamy white, except that it is suffused with yellow in the base of the bucket.

Lindley's description of *A. sylhetense* says that it is inodorous, gives the flowers a slightly greater size, and mentions no colour but white. But he himself later united Griffith's *A. ringiflorum* to his *A. sylhetense*; and Griffith says of *A. ringiflorum* that the white sepals and petals are spotted within with reddish purple, particularly towards their apices and that the linear concave stalk of the labellum is yellowish as also the mid lobe of the lip, which characters are found in the Siamese specimen. Griffith says that there are 5

crests on the labellum, 2 confluent; such a view is quite reconcilable with the one saying that there are 3 crests, the latter with two teeth at the back.

GASTRODIA MALAYANA, Ridl.

Gastrodia malayana,—an interesting leafless orchid has been found newly in Penang by Mr. Mohamed Haniff in a specimen 32 inches high. Such a height is far in excess of what it is known to reach in Singapore and neighbouring parts of the State of Johor.

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NOTES.

A POSSIBLE ANCIENT MIGRATION OF USEFUL PLANTS WESTWARD IN ASIA.

In a very interesting account of "The origin and ethnological significance of Indian boat designs" (*Memoirs Asiatic Soc. Bengal*, VII. 1920, p. 139-256) Mr. James Howell suggests that a boat-using community once occupied the coasts of Southern India which was of Negrito stock, and this was followed by a proto-Polynesian stock, and then by the Malaysian wave which reached Madagascar. Later the Dravidians came into Southern India and Ceylon from the Mediterranean by land, and completely absorbed the sea-going people whom they found already there.

These suggestions are worth remembering in connection with the migration of useful plants: the coconut for instance may have reached India by the agency of the second stock.

UNDER-SEA MEADOWS.

Professor W. A. Herdman's remarks in the *Journal of the Linnean Society of London. Zoology*, XXXIV, 1920, pp. 256-258, upon the great economic value of the seaweed meadows of the Irish Sea are most interesting. Firstly he touches upon the zone of the Brown Seaweeds, concluding "that a very large amount of organic food must be present" in it, and "it is not surprising that shoals of young fish are found feeding there." In the second place he turns to the green Grass Wrack (*Zostera marina*) which lives on muddy sand up to high water mark. The *Zostera* bed, says Professor Herdman, is an important source of food to fishes and invertebrate animals, "its waving forest, clothed with many other organisms, large and small, is one of the densest masses of living plant food. . . . in the sea, both directly from the food that it furnishes to the animals living in it, and indirectly from the enormous quantities of Diatoms which cover its decaying leaves."

In the seas of Malaya the brown seaweeds are unimportant: but not so the under-sea meadows of the tropical Grass-wrack, *Enhalus*,